CARRIER FOR TEST, BURN-IN, AND FIRST LEVEL PACKAGING

ABSTRACT OF THE DISCLOSURE

A plurality of semiconductor devices are provided on a carrier for testing or burning-in. The carrier is then cut up to provide single chip-on-carrier components or multi-chip-on-carrier components. The carrier is used as a first level package for each chip. Thus, the carrier serves a dual purpose for test and burn-in and for packaging. A lead reduction mechanism, such as a built-in self-test engine, can be provided on each chip or on the carrier and is connected to contacts of the carrier for the testing and burn-in steps. The final package after cutting includes at least one known good die and may include an array of chips on the carrier, such as a SIMM or a DIMM. The final package can also be a stack of chips each mounted on a separate carrier. The carriers of the stack are connected to each other through a substrate mounted along a side face of the stack that is electrically connected to a line of pads along an edge of each carrier. The carrier is formed of a flex material. It can also be formed of printed circuit board material. A window in the flex permits invoking redundancy on each chip after burn-in is complete, significantly improving yield as compared with present schemes that do not permit repair after burn-in.